

William Dreuth's Study of Bird Migration in Lincoln Park, Chicago

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and
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FOREWORD

When Mrs. O. E. Berg presented the 36 notebooks of her uncle, the late William Dreuth, to the Chicago Academy of Sciences on March 14, 1946, the scientific value of this vast accumulation of local data on birds was at once apparent. Since Mr. Dreuth's plans for publishing did not come to pass during his lifetime, it seemed that his memory could fittingly be honored, and other workers materially aided, by making this material generally available in printed form. Accordingly his friend, Charles T. Clark, at the request of the Academy, agreed to summarize and tabulate the records for publication. This task required many more hours of tedious labor than at first was envisioned, and it was performed with meticulous care. Because of increased vocational demands upon his time and energy, Mr. Clark was unable to bring the work into final form for publication. Again at the request of the Academy, Margaret Morse Nice accepted the responsibility for completing the manuscript. To these two altruistic souls, who selflessly gave much time and effort to this project, bird students owe a real and lasting debt.

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HOWARD K. GLOYD,
Director of the Museum
Chicago Academy of Sciences

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INTRODUCTION

The Chicago Academy of Sciences has recently come into possession of a noteworthy store of information on the migration of birds in this region—thirty-six notebooks of William Dreuth covering his observations for thirty years. From 1928 through 1943 an intensive study of bird migration was made in Lincoln Park.

The worth of these records lies in their continuity and reliability. Their usefulness to local bird students is clear. The data for the last 16 years have been summarized and tabulated by one of us (C.T.C.) and this summary has been used as a major source of migration dates by Edward R. Ford and Philip A. DuMont in their forthcoming publication on the birds of the Chicago region.

The present report should serve as a calendar for migration in this region, as well as a record of changes in bird life in Lincoln Park during the last 50 years, and an incentive to study the breeding population. It is hoped that it will stimulate interest not only in watching migration but in following the nesting birds in this and other city parks, and also in studying reasons for the increase and decrease of certain species and in trying to improve conditions for our native birds.

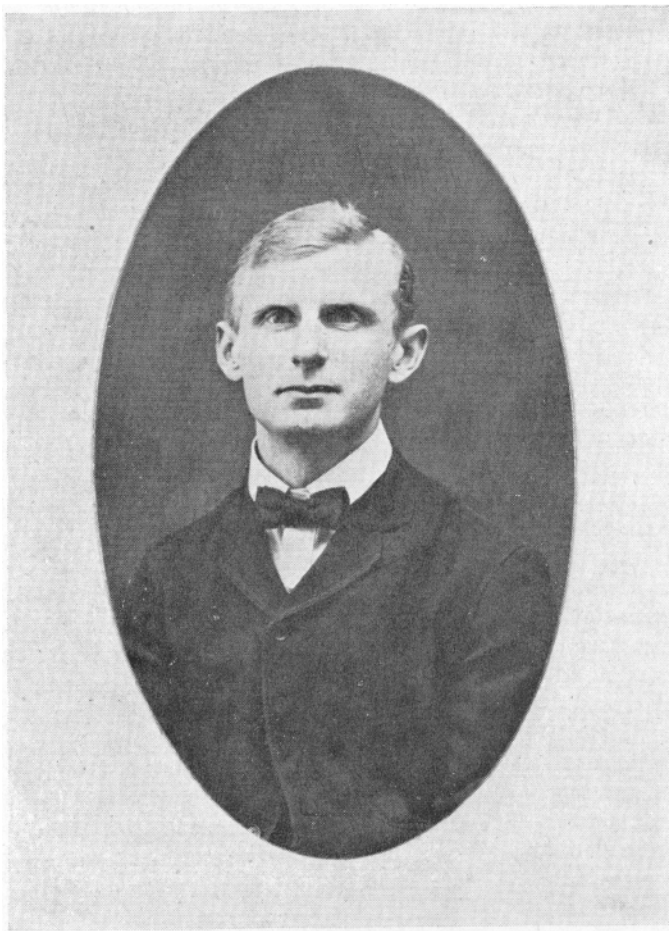
Dreuth's records too have a wider import. Because of his faithfulness in visiting the park nearly every day during spring and fall for 16 years, it is possible to correlate his findings with meteorological conditions and throw light on problems of migration. Winifred Smith of Two Rivers, Wisconsin, has studied this material and correlated the spring migration waves with wind direction and barometric pressure obtained from the United States Weather Bureau at Chicago. She reported her results at the Wilson Ornithological Club meeting in April, 1949, at Madison, Wisconsin, in a paper entitled "Meteorological Analysis of Migration Records." She showed charts of weather conditions and the number of new species recorded each day in Lincoln Park for one March, one April, and one May. She also showed charts dealing with the first arrival of the kingbird from 1928 to 1943 in relation to weather conditions.

Mrs. Smith has deposited with the Academy a complete set of migration and weather charts for each of the three spring months for the 16 years, filled out in the same way as the examples that are being published.

Many other studies might be made of this material. It would be of great interest to work out the fall migration in the same way as Mrs. Smith has done for the spring migration. Conditions influencing the spring and fall arrival of individual species could be investigated. The matter of numbers of each species seen by Dreuth in spring and fall is an untouched field. Many species that nest in the region are present only as transients in the park, hence dates of arrival and departure indicate the duration in this area of the northward and southward migration of these birds. There are undoubtedly other investigations that can be made from this large body of careful and continuous observation.

William Dreuth was born in Chicago, September 11, 1874, and died there August 12, 1944. From earliest childhood he loved nature. After completing grammar school he became a stock clerk in a mail order house where he worked until his retirement on a small pension. In natural history he was self-taught. He studied books, made a plant collection, haunted the Crerar Library, and on his travels to the East and West visited museums, parks, and conservatories. He was an all-round naturalist, well versed in botany as well as ornithology; his notebooks often mention the flowering of plants and the presence of various butterflies. He spent many summers at Lake Wisconsin.

Dreuth never married, but lived until his retirement with his brother, when he moved to 583 (old) Larrabee Street. He was a favorite of his nephews and nieces whom he encouraged in habits of thrift and in the observation of nature. He was a quiet, retiring man who loved solitude,



William Dreuth
1910

yet kind and friendly when sought out by other bird enthusiasts on spring mornings in Lincoln Park. It was the privilege of one of the authors (C.T.C.) to accompany him on many occasions throughout the years covered in this report. Dreuth was an expert field ornithologist, meticulously careful and conscientious in his identifications. His niece, Grace Berg, tells us that he had hoped to write a book on his bird studies, and also on his travels. This he never did.

It is our hope that this summary of his painstaking and faithful observations will serve as a small testimonial to this fine ornithologist; that it will help students of birds and stimulate them to add to the knowledge he accumulated.

Lincoln Park, the largest of Chicago's city parks, is primarily planned for recreation. It is liberally planted with trees, some of which are now of large size elms, maples, lindens, Ailanthus, ashes, mountain ashes, black and honey locusts, cottonwoods and willows, as well as crab-apples and hawthorns. There are thickets of native shrubs highbush cranberry, wafer ash, dogwoods, and elderberry, and many cultivated varieties.

In the last fifty years Lincoln Park has grown to the north and west, while the south boundary North Avenue has remained unchanged. The eastern boundary is Lake Michigan. The Chicago Park District has given us the following information. In 1898, the park comprised 308 acres; its north boundary was Diversey Avenue; its west boundary North Clark Street to Center and North Park Street, thence to Fullerton; Fullerton west to Lake View Avenue, thence north to Diversey Boulevard. About 1923, five and one-half acres around Waveland were set aside as a bird sanctuary.

From 1928 to 1943, the years covered in Dreuth's intensive study, the park was enlarged from 665 to 1119 acres. The north boundary was changed from Montrose Avenue to Foster Avenue by the middle thirties. The west boundary was North Clark Street to Lincoln Park West, thence to Fullerton Parkway; west to Lakeview, thence north to Sheridan Road, thence north to Irving Park Road, thence north on Lake Shore Drive to Montrose Avenue.

At present (1950) the park comprises 1189 acres, the area from Montrose Avenue to Ardmore Avenue having been recently added. The west boundary is North Clark Street to Lincoln Park West, thence to Fullerton Parkway, west to Lake View Avenue, thence north to Diversey, east to Lake Shore Drive, north to Foster Avenue, and from there the boundary to Ardmore is the riparian rights line east of Sheridan Road.

From 1903 to 1927, Dreuth visited Lincoln Park once or twice a week. During the next 16 years he made a serious study of migration. In March and November he averaged 13 trips a month, in April, May, August (after 1932), September, and October from 21 to 27. In 1928, 1938, and 1939

he made 16 to 19 trips in December, but very few in other years. In January the trips averaged two per year, and in February three, although in 1930, he made 15 trips and in 1931 ten. Only five trips were taken in June-- June 1 and 2 in 1928 and 1940, June 12, 1932, and one trip in July-- July 7, 1929 (Table VI) .

Most of his trips started shortly before or after sunrise; they lasted from two to over six hours, extending probably from three to over four miles. His coverage of the park during the years may be divided into three periods. (1) From 1928 through the spring of 1932 from the south end of the park near North Avenue to Addison Street. (2) From the fall of 1932 through the spring of 1935 he visited both south and north ends of the park (from Addison Street to Montrose or Foster Avenue) because of a fill being made off Montrose Avenue which attracted many gulls and shore birds. (W. J. Beecher has vividly described this place and his experience there with the "Birdman" in "The Chicago Beach: In Memoriam," *The Audubon Bulletin*, no. 29:5-8, Illinois Audubon Society, 1936) . (3) From the fall of 1935 he visited the north end exclusively.

His notebooks were kept in legible longhand. Each trip was written up with the route taken, the temperature, sky condition, wind direction, and the number of species seen. The number of individuals of each species is shown with notes as to sex, age, and song. Detailed descriptions are given in the case of rare birds and also observations on aberrant plumages, on feeding habits, and other items of interest.

He made two kinds of annual summaries: one in dated chronological order of the first arrival of each species, the other in A.O.U. checklist order of each species with every date on which it was seen during the year. In two separate notebooks he listed the first appearance of each species found in the Chicago Area with the earliest (and sometimes latest) dates seen in spring and fall from 1903 through 1943, occurrences away from Lincoln Park being marked with a green dot.

In the preparation of the present paper one of the authors (C.T.C.) indicated the date of every trip in each month from 1928 to 1943 on 5 x 8 inch cards and copied the annual summaries of occurrence of each species on similar cards (both sets of which he has deposited with the Chicago Academy of Sciences) . He worked out the earliest, latest, and average dates of arrival and departure for each species (Table I) ; he calculated an elaborate system of frequency (Table V) ; and wrote a detailed report.

The work of the other author (M.M.N.) has been largely editorial in amplifying parts of this report and condensing others; she is also responsible for the sections on breeding birds and changes in status.

Grateful acknowledgments are due to Dr. H. K. Gloyd, Director of the Chicago Academy of Sciences, to Philip A. DuMont, U. S. Fish and Wildlife Service, and to Edward R. Ford, Melbourne, Florida, for their inter-

est and helpful advice; to Dr. A. L. Rand, Chicago Natural History Museum, for critical comment on taxonomic matters; and to Holly R. Bennett, 2457 Orchard Street, Chicago, for data on the breeding birds of Lincoln Park.

Mrs. O. E. Berg, 1114 West Lill Street, Chicago, in appreciating the importance of her uncle's notebooks and presenting them to the Chicago Academy of Sciences, has performed a very real service to students of birds in the Chicago region.

THE LIST OF BIRDS

In Table I, the list of species seen is given with migration dates: the earliest date of arrival with the year, average date of arrival, average date last seen, and latest date seen with the year. Occasionally, earliest or latest occurrences have fallen upon the same date in more than one year, in which cases the earliest year was chosen. The average dates of last seen in spring are not representative for some species, especially shore birds and warblers since these often linger into June. Also, the first dates of arrival in fall are not early enough for some of the gulls, terns, and shore birds, as these birds often arrive in July. In cases where a bird was seen only a few times, definite dates other than earliest and latest are shown in parentheses. The same method is used to indicate an occasional winter or summer date for a bird predominantly a spring and fall transient.

The last two columns with the number of days and years each species was recorded afford an indication of regularity of occurrence.

Of the 260 birds listed, 256 are full species. The four sets of subspecies—herring and Thayer's gull, northern and prairie horned lark, veery and willow thrush, white-crowned and Gambel's sparrow are, in many cases, distinguishable in the field.

Ten of the list may be present all year (seven of them breeding in the park) ; 28 may be present throughout the summer (22 known to have nested, see Table III) ; 139 are transients that have been recorded from 16 to 1577 times in the 16 years; and 83 are casual visitors that have been seen from one to 15 times, five of them being strictly accidental, because far out of their normal range (see Table V) .

Table I. Sixteen Years' Migration Records in Lincoln Park

() — Other dates
† — See Comments on List
‡ — See Changes in Status
* — Has bred. See Breeding Birds

Species	Earliest date of arrival	Average date of arrival	Average date last seen	Latest date seen	Number of days seen	Number of years seen
Common Loon	Mar 31 39	Apr 12	May 10	May 15 41	48	13
<i>Gavia immer</i>	Oct 26 40	Nov 6	Nov 26	Dec 12 38	29	6
Red-throated Loon	Mar 21 39	(Apr 15 28)	(May 13 41)	May 20 31	6	4
<i>Gavia stellata</i>						
Holboell's Grebe	Nov 22 38			Dec 16 38	6	1
<i>Colymbus grisescens</i>						
Horned Grebe	Feb 27 33	Apr 12	May 1	May 11 40	56	10
<i>Colymbus auritus</i>	Sep 1 32	Nov 2	Nov 17	Dec 11 38	42	8
† Eared Grebe	Apr 6 39			Apr 9 39	3	1
<i>Colymbus nigricollis</i>						
Pied-billed Grebe	Apr 1 28	Apr 13	May 2	May 24 42	53	13
<i>Podilymbus podiceps</i>	Aug 22 41	Oct 6	Oct 30	Dec 12 31	36	12
Double-crested Cormorant	Apr 10 43	Apr 23	May 1	May 24 38	14	5
<i>Phalacrocorax auritus</i>	Sep 11 41	Oct 11	Nov 12	Nov 27 38	19	11
Great Blue Heron	Mar 30 41	Apr 10	May 18	May 29 38	21	8
<i>Ardea herodias</i>	Aug 1 33	Aug 7	Oct 18	Nov 14 35	48	12
American Egret	May 6 43				1	1
<i>Casmerodius albus</i>	Aug 9 41			Aug 15 43	2	2
Green Heron	Apr 13 41	Apr 28	May 24	May 31 40	140	15
<i>Butorides virescens</i>	Aug 1 40	Aug 5	Sep 21	Oct 9 36	204	14
Black-crowned Night Heron	Mar 5 35	Apr 17	May 24	May 31 37	21	9
<i>Nycticorax nycticorax</i>	Aug. 2 36	Sep 13	Sep 17	Oct 23 39	13	9
	(Jan 11 35)					

Species	Earliest date of arrival	Average date of arrival	Average date last seen	Latest date seen	Number of days seen	Number of years seen
Yellow-crowned Night Heron <i>Nyctanassa violacea</i>	May 6 43				1	1
American Bittern <i>Botaurus lentiginosus</i>	Apr 11 38 Aug 15 36	Apr 29 Sep 8	May 15 Oct 25	Jun 2 40 Nov 5 40	35 32	13 13
Least Bittern <i>Ixobrychus exilis</i>	May 1 37 Aug 17 39	May 14	May 17	May 22 34 Aug 22 39	5 3	4 1
Canada Goose <i>Branta canadensis</i>	Mar 8 38 Oct 7 42	Mar 25 Oct 19	Apr 18 Oct 26	May 21 40 Nov 7 39	8 5	4 4
† Brant <i>Branta bernicla</i>	Oct. 9 32				1	1
Lesser Snow Goose <i>Chen hyperborea</i>	Oct 15 36	Oct 26	Oct 28	Nov 4 38	13	8
Blue Goose <i>Chen caerulescens</i>	Oct 15 36	Nov 5	Nov 7	Nov 30 32	9	5
† * Mallard <i>Anas platyrhynchos</i>	Present all year					
Black Duck <i>Anas rubripes</i>	Apr 4 33 Sep 21 28				1 1	1 1
Pintail <i>Anas acuta</i>	Mar 31 40 Sep 29 41	Apr 5 (Nov 6 38)	Apr 11	Apr 25 41 Dec 22 39	7 4	3 3
Green-winged Teal <i>Anas carolinensis</i>	Sep 17 34			Oct 23 33	2	2
Blue-winged Teal <i>Anas discors</i>	Mar 23 35 Aug 12 37	Apr 23 (Aug 21 36)	May 14 (Sep 5 31)	May 25 31 Oct 2 32	46 8	14 4
Baldpate <i>Mareca americana</i>	Mar 19 40	Mar 24	Apr 2	May 4 37	30	8
Shoveller <i>Spatula clypeata</i>	Mar 20 39 Aug 31 42	Apr 1	Apr 8	Apr 18 39 Dec 29 39	11 2	3 2
Wood Duck <i>Aix sponsa</i>	Sep 9 41				1	1

Redhead	Mar 11 32	Mar 21	Apr 12	Apr 22 41	15	6
<i>Aythya americana</i>	Dec 14 38			Dec 17 38	4	1
Ring-necked Duck	Mar 13 38	Mar 27	Apr 11	Apr 19 39	15	7
<i>Aythya collaris</i>	Nov 17 39	Nov 27	Dec 7	Dec 18 39	23	4
Canvas-back	Mar 21 39	(Apr 2 40)	(Apr 4 32)	Apr 22 28	8	4
<i>Aythya valisineria</i>	Nov 22 40			Dec 17 38	2	2
†Scaup Ducks	Feb 27 33	Mar 14	May 17	May 31 38	462	16
<i>Aythya marila</i> and <i>affinis</i>	Oct 21 39	Oct 30	Dec 9	Dec 21 38	111	12
American Golden-eye	Nov 6 40	Nov 22	Apr 9	May 16 40	411	16
<i>Glaucionetta clangula</i>						
Buffle-head	Mar 8 38	Mar 15	Apr 17	Apr 27 40	23	8
<i>Glaucionetta albeola</i>	Nov 7 35	Nov 19	Dec 5	Dec 21 38	17	5
Old-squaw	Oct 23 40	Nov 1	Apr 14	May 23 31	463	16
<i>Clangula hyemalis</i>						
†American Eider	Apr 12 43				1	1
<i>Somateria mollissima</i>						
†King Eider	Nov 25 32				1	1
<i>Somateria spectabilis</i>						
White-winged Scoter	May 4 33			May 7 33	4	1
<i>Melanitta fusca</i>	Nov 25 40		(Dec 6 30)	Dec 28 37	6	3
†Surf Scoter	Dec 11 38				1	1
<i>Melanitta perspicillata</i>						
†American Scoter	May 13 31				1	1
<i>Oidemia nigra</i>	Nov 8 39				1	1
Ruddy Duck	Mar 17 33	Mar 28		Apr 28 39	11	8
<i>Eristata jaimeicensis</i>	Oct 21 39	(Nov 11 36)		Dec 18 39	12	2
Hooded Merganser	Mar 21 43	Mar 30	Apr 14	Apr 19 41	22	8
<i>Lophodytes cucullatus</i>	Aug 9 37			Dec 18 39	17	5
	(Jun 2 28)	(Jan 4 32)	(Jan 11 35)			
American Merganser	Nov 12 33	Nov 18	Apr 1	Apr 19 40	186	15
<i>Mergus merganser</i>						
Red-breasted Merganser	Oct 28 36	Nov 7	May 7	May 22 34	529	16
<i>Mergus serrator</i>						

Species	Earliest date of arrival	Average date of arrival	Average date last seen	Latest date seen	Number of days seen	Number of years seen
Sharp-shinned Hawk <i>Accipiter striatus</i>	Apr 1 38 Sep 5 33	Apr 12 Sep 11	May 19 Oct 18	May 25 43 Nov 2 42	20 23	9 8
Cooper's Hawk <i>Accipiter cooperii</i>	May 6 43 Sep 13 38			1 1	1 1	1 1
Red-shouldered Hawk <i>Buteo lineatus</i>	Apr 4 40			May 13 40	2	1
Rough-legged Hawk <i>Buteo lagopus</i>	May 2 40 Nov 22 30			1 1	1 1	1 1
Marsh Hawk <i>Circus cyaneus</i>	Mar 3 39 Aug 14 38	Apr 7 Oct 21	Apr 30 Nov 7	May 12 40 Nov 27 41	22 15	7 6
Duck Hawk <i>Falco peregrinus</i>	Sep 19 37	Sep 28	Oct 14	Oct 17 37	11	6
Sparrow Hawk <i>Falco sparverius</i>	Mar 22 39 Aug 24 36	Apr 6 Sep 7	Nov 11	May 26 43 Nov 22 40	10 24	8 8
King Rail <i>Rallus elegans</i>	Apr 27 33	May 9	May 10	May 25 31	9	8
Virginia Rail <i>Rallus limicola</i>	Apr 14 41 Aug 15 33	Apr 29	May 1	May 15 40 Oct 8 43	8 4	7 4
Sora <i>Porzana carolina</i>	Apr 21 32 Aug 9 36	Apr 27 Sep 16	May 13 Oct 1	May 18 29 Oct 19 36	43 45	11 12
Coot <i>Fulica americana</i>	Feb 22 32 Sep 16 32	Apr 4 Oct 3	May 13 Nov 21	May 23 29 Dec 29 39	51 100	11 15
Piping Plover <i>Charadrius melodus</i>	Apr 23 42 Aug 13 34	Apr 28 Aug 16	May 14 Aug 27	May 22 38 Sep 24 36	14 12	7 5
Semipalmated Plover <i>Charadrius hiaticula</i>	Apr 17 41 Aug 1 33	May 1 Aug 3	May 26 Oct 6	May 30 39 Nov 6 38	52 439	9 15
*Killdeer <i>Charadrius vociferus</i>	Feb 26 32	Mar 19	Oct 30	Nov 20 35	851	16
Golden Plover <i>Pluvialis dominica</i>	Aug 6 39	Aug 25	Oct 14	Nov 8 30	89	12

Black-bellied Plover	Apr 26 40	May 7	May 27	May 30 40	46	8
<i>Squatarola squatarola</i>	Aug 7 42	Aug 24	Oct 30	Nov 26 38	380	14
Ruddy Turnstone	May 13 39	May 15	May 24	May 28 37	29	8
<i>Arenaria interpres</i>	Aug 2 34	Aug 15	Oct 1	Nov 12 36	258	14
Woodcock	Mar 15 35	Mar 29	May 18	May 24 40	26	12
<i>Philohela minor</i>						
Wilson's Snipe	Apr 5 39	Apr 16	May 2	May 14 31	27	11
<i>Capella gallinago</i>	Aug 26 41	Sep 6	Oct 20	Nov 22 38	58	14
Hudsonian Curlew	May 31 41				1	1
<i>Numenius phaeopus</i>	Aug 6 40	(Aug 18 41)	(Sep 1 34)	Sep 18 37	5	4
Upland Plover	Apr 19 41	May 2	May 12	May 27 39	8	5
<i>Bartramia longicauda</i>	Aug 6 40	(Aug 6 42)	(Aug 29 39)	Sep 24 37	6	4
*Spotted Sandpiper	Apr 18 34	May 2	Sep 18	Oct 1 33	605	16
<i>Actitis macularia</i>						
Solitary Sandpiper	Apr 20 39	Apr 30	May 15	May 23 39	37	14
<i>Tringa solitaria</i>	Aug 5 37	Aug 17	Sep 18	Oct 12 39	42	12
Willet	Apr 28 42	(Apr 30 33)	(May 12 39)	May 29 43	7	4
<i>Catoptrophorus semipalmatus</i>	Aug 1 36	(Aug 3 39)		Aug 23 38	6	3
Greater Yellow-legs	Mar 31 43	Apr 14	May 11	May 21 41	12	5
<i>Totanus melanoleucus</i>	Aug 2 34	Aug 22	Oct 18	Nov 5 40	17	9
Lesser Yellow-legs	Apr 13 41	Apr 28	May 6	May 24 41	11	6
<i>Totanus flavipes</i>	Aug 1 33	Aug 9	Sep 3	Oct 22 36	27	10
American Knot	Aug 21 37	(Sep 3 38)	(Sep 10 34)	Sep 24 36	7	4
<i>Calidris canutus</i>						
Purple Sandpiper	Nov 30 38				1	1
<i>Erolia maritima</i>						
Pectoral Sandpiper	Apr 1 38	(Apr 17 38)	(May 10 34)	May 19 38	8	3
<i>Erolia melanotos</i>	Aug 1 33	Aug 8	Oct 17	Oct 27 29	79	10
White-rumped Sandpiper	Aug 15 36	(Sep 1 38)		Oct 10 36	3	2
<i>Erolia fuscicollis</i>						
Baird's Sandpiper	May 6 33	(May 11 40)		May 12 40	3	2
<i>Erolia bairdi</i>	Aug 5 37	Aug 19	Oct 4	Nov 11 35	118	12

Species	Earliest date of arrival	Average date of arrival	Average date last seen	Latest date seen	Number of days seen	Number of years seen
Least Sandpiper	Apr 29 42	(May 7 39)	(May 19 38)	May 20 41	8	5
<i>Erolia minutilla</i>	Aug 1 33	Aug 8	Sep 21	Oct 10 36	190	12
Red-backed Sandpiper	May 10 33	(May 14 37)	(May 22 38)	May 28 42	5	4
<i>Erolia alpina</i>	Sep 25 34	Oct 3	Oct 31	Nov 11 35	85	12
Dowitcher	May 18 37		(May 19 37)	May 20 38	3	2
<i>Limnodromus griseus</i>	Aug 6 33	(Aug 20 37)	(Sep 1 32)	Sep 11 32	8	3
Semipalmated Sandpiper	May 6 40	May 15		Jun 1 40	35	7
<i>Ereunetes pusillus</i>	Aug 1 33	Aug 4	Oct 7	Oct 22 36	247	14
Western Sandpiper	Aug 8 39	(Aug 24 36)	(Aug 29 37)	Sep 3 37	5	3
<i>Ereunetes mauri</i>						
Buff-breasted Sandpiper	Aug 21 41	Aug 29	Sep 13	Oct 5 40	28	9
<i>Tryngites subruficollis</i>						
Sanderling	May 7 33	May 15	May 27	May 31 29	29	9
<i>Crocethia alba</i>	Aug 1 34	Aug 7	Nov 4	Nov 26 38	542	16
Northern Phalarope	Sep 25 32			Oct 2 32	2	1
<i>Lobipes lobatus</i>						
Jaeger	Oct 17 37	(Oct 24 38)		Nov 15 38	3	2
<i>Stercorarius</i> sp.						
Glaucous Gull	Apr 10 43			Apr 22 28	2	2
<i>Larus hyperboreus</i>						
Iceland Gull	Mar 26 41				1	1
<i>Larus leucopterus</i>						
Great Black-backed Gull	Sep 6 38				1	1
<i>Larus marinus</i>						
Present all year					1608	16
♂Herring Gull						
<i>Larus argentatus smithsonianus</i>						
†Thayer's Gull	Mar 20 39				1	1
<i>Larus argentatus thayeri</i>						
‡Ring-billed Gull	Feb 14 38	Mar 16	Apr 23	Jun 1 40	139	13
<i>Larus delawarensis</i>	Aug 4 43	Aug 30	Nov 30	Dec 29 30 (Jan 7 40)	433	16

Laughing Gull <i>Larus atricilla</i>	Aug 23 43	(Aug 30 35)	(Sep 8 35)	Sep 29 36	6	3
Franklin's Gull <i>Larus pipixcan</i>	Aug 6 42	Aug 16	Nov 2	Nov 23 40	135	12
Bonaparte's Gull <i>Larus philadelphia</i>	Mar 20 34 Aug 1 34	Mar 31 Aug 2	May 26 Dec 11	May 31 38 Dec 29 39 (Jan 4 32)	575 1002	16 16
†Little Gull <i>Larus minutus</i>	Apr 29 38 Aug 18 39	(May 9 43) Aug 25	(May 12 42) Oct 17	May 28 42 Dec 11 38 Oct 15 33	10 21 2	3 6 2
Sabine's Gull <i>Xema sabini</i>	Sep 9 37					
Forster's Tern <i>Sterna forsteri</i>	Apr 26 40 Aug 5 39	(Apr 27 39) Aug 15	(May 7 38) Oct 20	May 10 43 Oct 27 39	8 22	4 9
Common Tern <i>Sterna hirundo</i>	Apr 22 41 Aug 1 36	Apr 29 Aug 4	May 25 Oct 20	May 30 38 Nov 15 38	271 206	16 13
Caspian Tern <i>Hydroprogne caspia</i>	Apr 18 41 Aug 20 36	(May 4 43) Aug 31	(May 16 40) Oct 4	May 19 39 Oct 14 39	5 43	4 11
Black Tern <i>Chlidonias nigra</i>	Apr 26 39 Aug 1 33	May 7 Aug 2	May 22 Sep 19	May 31 40 Oct 18 28	108 368	13 16
†Mourning Dove <i>Zenaidura macroura</i>	Mar 12 38 Aug 3 36	Mar 27 Sep 20	May 18 Oct 14	June 1 40 Nov 20 35	247 37	16 11
*Yellow-billed Cuckoo <i>Coccyzus americanus</i>	Apr 29 36	May 18	Sep 16	Oct 19 38	107	16
Black-billed Cuckoo <i>Coccyzus erythrophthalmus</i>	May 2 38 Aug 1 39	May 11 Aug 15	May 28 Sep 21	June 2 40 Oct 5 42	68 51	14 13
Barn Owl <i>Tyto alba</i>	Apr 18 41 Oct 12 39	(Oct 19 28)	(Oct 28 35)	Oct 29 35 May 31 28	1 4 3	1 3 2
*Screech Owl <i>Otus asio</i>	May 10 31	(May 22 31)				
Snowy Owl <i>Nyctea scandiaca</i>	Nov 9 36	(Nov 12 37)		Dec 3 33	7	3
Long-eared Owl <i>Asio otus</i>	Mar 22 38 Oct 22 39	(Apr 23 41)		Apr 24 39	3 1	3 1

Species	Earliest date of arrival	Average date of arrival	Average date last seen	Latest date seen	Number of days seen	Number of years seen
Short-eared Owl	Apr 11 38	(Apr 15 41)	(Apr 17 42)	Apr 23 43	5	4
<i>Asio flammeus</i>	Aug 17 34	Sep 28	Nov 4	Nov 20 35	54	11
Saw-whet Owl	Apr 9 34				1	1
<i>Aegolius acadica</i>						
Whip-poor-will	Apr 24 37	Apr 27	May 12	May 24 43	22	10
<i>Caprimulgus vociferus</i>	Aug 26 41			Sep 7 32	2	2
††Nighthawk	May 12 37	May 17	Sep 11	Sep 21 36	246	11
<i>Chordeiles minor</i>						
†Chimney Swift	Apr 13 37	May 6	Sep 12	Sep 30 36	367	16
<i>Chaetura pelagica</i>						
Ruby-throated Hummingbird	May 10 42	May 16	May 27	Jun 2 40	68	16
<i>Archilochus colubris</i>	Aug 12 36	Sep 2	Sep 25	Oct 2 30	31	9
Belted Kingfisher	Mar 21 43	Apr 1	May 21	May 31 37	240	16
<i>Megasceryle alcyon</i>	Aug 1 37	Aug 6	Oct 18	Nov 16 36 (Dec 22 39)	226	16
*Flicker	Mar 16 30	Mar 28	Oct 23	Nov 7 34	1290	16
<i>Colaptes auratus</i>						
Red-bellied Woodpecker	Apr 30 32			Mar 21 38	2	2
<i>Centurus carolinus</i>						
*Red-headed Woodpecker	Apr 20 31	Apr 28	May 28	Jun 2 28	366	16
<i>Melanerpes erythrocephalus</i>	Aug 20 36	Aug 30	Oct 12	Oct 27 37	243	16
†Yellow-bellied Sapsucker	Mar 23 29	Apr 1	May 4	May 25 33	258	15
<i>Sphyrapicus varius varius</i>	Sep 7 41	Sep 15	Oct 18	Oct 30 29	310	16
Hairy Woodpecker	Mar 23 35	(May 15 37)		May 22 36	3	3
<i>Dendrocopos villosus</i>	Sep 30 33	(Oct 9 42)	(Dec 5 29)	Jan 8 28	5	4
Downy Woodpecker	Present all year				313	16
<i>Dendrocopus pubescens</i>						
*Eastern Kingbird	Apr 28 40	May 6	Aug 31	Sep 23 40	228	16
<i>Tyrannus tyrannus</i>						

Arkansas Kingbird <i>Tyrannus verticalis</i>	Sep 11	42							1	1
Scissor-tailed Flycatcher <i>Muscivora forficata</i>	May 20	33							1	1
Crested Flycatcher <i>Myiarchus cinerascens</i>	Apr 24	37	May 4	Jun 26	Jun 2	40	126		16	
Phoebe <i>Sayornis phoebe</i>	Aug 19	42	Aug 28	Sep 9	Sep 24	38	35		12	
Yellow-bellied Flycatcher <i>Empidonax flaviventris</i>	Mar 16	38	Mar 28	May 1	May 7	29	208		15	
Alder Flycatcher <i>Empidonax traillii</i>	Aug 4	38	Aug 20	Oct 23	Nov 5	31	220		16	
Least Flycatcher <i>Empidonax minimus</i>	May 7	43	May 17	May 29	Jun 2	40	114		15	
*Wood Pewee <i>Contopus virens</i>	Aug 4	38	Aug 15	Sep 19	Sep 30	30	125		15	
Olive-sided Flycatcher <i>Nuttallornis borealis</i>	May 13	42	(May 16 43)	(May 26 39)	May 31	41	7		4	
Northern Horned Lark <i>Eremophila alpestris alpestris</i>	Apr 29	42	May 10	May 27	June 1	40	66		14	
Prairie Horned Lark <i>Eremophila alpestris praticola</i>	Aug 17	39		(Aug 20 36)	Aug 21	36	3		2	
†Tree Swallow <i>Iridoprocne bicolor</i>	May 7	36	May 13	Oct 1	Oct 11	39	366		16	
†Bank Swallow <i>Riparia riparia</i>	May 13	34	May 21	May 21	May 27	37	8		7	
†Rough-winged Swallow <i>Stelgidopteryx ruficollis</i>	Aug 21	34	Aug 31	Sep 4	Sep 13	42	8		6	
†Barn Swallow <i>Hirundo rustica</i>	Apr 4	40	(Apr 24 39)	(May 1 36)	May 29	42	4		4	
†Cliff Swallow <i>Petrochelidon pyrrhonota</i>	Sep 20	38	Oct 3	Nov 22	Dec 5	39	27		8	
	Mar 3	42	Mar 14	May 23	May 30	38	101		10	
	Aug 4	36	Oct 10	Oct 29	Dec 5	39	35		11	
	Apr 9	34	Apr 25	May 15	May 31	37	61		15	
	Aug 12	36	(Aug 19 42)	(Aug 31 40)	Oct 25	29	8		4	
	Apr 28	33	May 9	May 21	May 28	32	14		5	
	Aug 16	35			Aug 31	40	2		2	
	May 11	35	(May 19 42)	(May 19 29)	May 20	29	4		3	
	Apr 16	40	Apr 26	May 26	Jun 2	40	213		16	
	Aug 1	34	Aug 7	Aug 24	Sep 16	37	27		11	
	Apr 30	38	May 11	May 15	May 25	40	8		6	
	Aug 22	39	(Sep 11 40)	(Sep 16 37)	Oct 24	35	6		5	

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*Purple Martin <i>Progne subis</i>	Apr 2 33	Apr 11	Sep 10	Sep 24 39	951	16
*Blue Jay <i>Cyanocitta cristata</i>	Mar 26 36	Apr 26	Oct 17	Dec 15 39	517	16
Crow	Mar 3 37	Mar 13	May 4	Jun 2 40	96	15
<i>Corvus brachyrhynchos</i>	Aug 25 40	Sept 1	Oct 28	Nov 12 40	57	5
Black-capped Chickadee	Feb 27 29	Mar 23	Apr 29	May 2 30	28	5
<i>Parus atricapillus</i>	Oct 11 41	(Oct 23 42)	(Nov 3 33)	Dec 11 28	21	4
Tufted Titmouse	Aug 10 37	(Oct 24 33)		Oct 27 39	3	3
<i>Parus bicolor</i>						
White-breasted Nuthatch	Feb 19 30	(Apr 11 33)	(Apr 18 34)	Apr 28 30	17	4
<i>Sitta carolinensis</i>	Oct 2 40	(Oct 8 39)	(Oct 30 33)	Dec 31 29	11	5
Red-breasted Nuthatch	Apr 25 32	May 1	May 18	May 27 43	62	11
<i>Sitta canadensis</i>	Aug 28 41	Sep 16	Oct 24	Nov 8 28	81	15
Brown Creeper	Mar 23 36	Apr 1	May 3	May 16 33	227	15
<i>Certhia familiaris</i>	Sep 12 37	Sep 20	Nov 3	Nov 17 31	370	16
*House Wren <i>Troglodytes aedon</i>	Apr 24 29	Apr 29	Oct 9	Oct 24 39	239	16
Winter Wren	Apr 8 29	Apr 16	Apr 23	May 21 38	12	9
<i>Troglodytes troglodytes</i>	Sep 16 38	Oct 1	Oct 25	Nov 1 35	30	11
Bewick's Wren <i>Thryomanes bewickii</i>	Apr 5 43	(Apr 8 29)	(May 6 32)	May 12 33	13	4
Carolina Wren <i>Thryothorus ludovicianus</i>	Aug 8 36	(Aug 30 36)	(Sep 20 36)	Oct 24 36	21	1
Long-billed Marsh Wren <i>Telmatorhynchus palustris</i>	Apr 22 29	May 9	May 22	May 27 31	33	12
Short-billed Marsh Wren <i>Cistothorus platensis</i>	Aug 24 36	Sep 24	Oct 6	Oct 24 37	21	11
Mockingbird <i>Mimus polyglottos</i>	Apr 30 36	May 8	May 23	May 25 40	11	7
	Aug 12 36	Sep 20	Oct 8	Oct 11 34	19	11
	Apr 25 37	(May 8 41)	(May 15 29)	May 22 43	7	5
	Sep 4 34	(Sep 9 39)	(Oct 11 37)	Nov 30 33	10	5

*Catbird	Apr 24 37	May 3	Oct 8	Oct 18 40	444	16
<i>Dumetella carolinensis</i>						
*Brown Thrasher	Apr 6 29	Apr 18	Oct 12	Nov 21 30	1023	16
<i>Toxostoma rufum</i>						
*Robin	Feb 19 35	Mar 9	Nov 21	Nov 30 33	2039	16
<i>Turdus migratorius</i>		(Seen in 4 Januaries and 4 Decembers)				
Wood Thrush	May 1 33	May 7	May 19	May 31 40	36	14
<i>Hylocichla ustulata</i>	Sep 6 31	Sep 9	Sep 28	Oct 6 40	15	10
Hermit Thrush	Mar 23 29	Apr 1	May 9	May 23 31	332	16
<i>Hylocichla guttata</i>	Sep 11 37	Sep 21	Oct 28	Nov 25 35	390	16
				(Dec 7 31)		
Olive-backed Thrush	Apr 17 37	Apr 28	May 28	June 2 28	363	16
<i>Hylocichla ustulata</i>	Aug 13 35	Aug 26	Oct 7	Oct 17 30	319	16
Gray-cheeked Thrush	Apr 25 29	May 4	May 25	Jun 2 28	221	16
<i>Hylocichla minima</i>	Aug 21 38	Sep 4	Oct 5	Oct 13 33	130	15
Veery	Apr 29 36	May 5	May 23	Jun 2 40	114	16
<i>Hylocichla fuscescens fuscescens</i>	Aug 22 41	Aug 29	Sep 6	Sep 19 38	13	6
Willow Thrush	Apr 30 36	May 7	May 25	May 28 34	81	15
<i>Hylocichla fuscescens salicicola</i>	Aug 31 35	(Sep 6 34)	(Sep 11 30)	Sep 16 37	6	5
†Bluebird	Feb. 23 30	Mar 19	May 17	May 29 42	112	16
<i>Sialia sialis</i>						
Blue-gray Gnatcatcher	Apr 15 38	May 1	May 15	May 26 31	63	15
<i>Polioptila caerulea</i>	Aug 25 34	(Sep 6 30)	(Oct 2 28)	Oct 2 34	5	3
Golden-crowned Kinglet	Mar 20 42	Mar 31	Apr 29	May 27 43	175	16
<i>Regulus satrapa</i>	Sep 13 41	Sep 24	Nov 8	Dec 4 35	382	16
Ruby-crowned Kinglet	Apr 1 43	Apr 11	May 20	Jun 1 40	339	16
<i>Regulus calendula</i>	Sep 6 41	Sep 14	Oct 27	Nov 17 39	313	16
American Pipit	May 3 38	(May 6 40)	(May 17 34)	May 24 37	6	4
<i>Anthus spinoletta</i>	Sep 5 37	Sep 27	Oct 18	Nov 18 43	24	9
				(Dec 24 36)		
Bohemian Waxwing	Dec 26 31				1	1
<i>Bombycilla garrulus</i>						

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Cedar Waxwing	Mar 2 37	Apr 30	May 25	Jun 2 40	75	14
<i>Bombicilla cedrorum</i>	Aug 2 36	Aug 14	Oct 16	Dec 22 28	156	15
Northern Shrike	Oct 25 29				1	1
<i>Lanius excubitor</i>						
Migrant Shrike	Mar 13 38	Mar 30	Apr 6	Apr 23 39	12	7
<i>Lanius ludovicianus</i>						
†*Starling	Resident from 1932 on				1643	12
<i>Sturnus vulgaris</i>						
Bell's Vireo	Sep 29 41				1	1
<i>Vireo bellii</i>						
Yellow-throated Vireo	Apr 25 42	May 5	May 19	May 28 29	14	6
<i>Vireo flavifrons</i>	Sep 1 30	Sep 9	Sep 13	Sep 28 29	14	10
Blue-headed Vireo	Apr 29 30	May 8	May 23	May 31 38	62	13
<i>Vireo solitarius</i>	Sep 4 42	Sep 14	Oct 7	Oct 17 30	37	14
*Red-eyed Vireo	Apr 23 41	May 14	Oct 4	Oct 24 28	367	16
<i>Vireo olivaceus</i>						
Philadelphia Vireo	May 12 36	May 19	May 27	May 31 29	66	15
<i>Vireo philadelphicus</i>	Aug 18 41	Sep 9	Sep 24	Oct 3 30	65	15
*Warbling Vireo	May 2	May 9	Sep 5	Oct 15 39	67	14
<i>Vireo gilvus</i>						
Black and White Warbler	Apr 24 29	Apr 30	May 25	May 30 40	234	16
<i>Mniotilta varia</i>	Aug 13 36	Aug 18	Oct 7	Oct 14 39	376	16
Prothonotary Warbler	May 5 43	(May 11 30)	(May 15 28)	May 23 33	8	4
<i>Protonotaria citrea</i>	Aug 13 34	(Aug 14 34)		Sep 14 35	3	2
†Swainson's Warbler	Apr 19 41				1	1
<i>Limnolophus swainsonii</i>						
Golden-winged Warbler	May 2 42	May 11	May 12	May 20 36	12	9
<i>Vermivora chrysoptera</i>	Aug 16 36	Aug 27	Sep 11	Oct 1 34	30	13
Blue-winged Warbler	May 3 38			May 5 43	2	2
<i>Vermivora pinus</i>						

tennessee warbler	May 2	30	May 12	May 24	Jun 1	40	64	15
<i>Vermivora peregrina</i>	Aug 9	39	Aug 21	Oct 11	Oct 25	35	264	16
Orange-crowned Warbler	Apr 23	39	May 2	May 19	May 25	43	132	16
<i>Vermivora celata</i>	Aug 29	38	Sep 24	Oct 16	Nov 7	31	138	16
Nashville Warbler	Apr 24	42	May 5	May 22	Jun 1	40	149	16
<i>Vermivora ruficapilla</i>	Aug 18	33	Aug 31	Oct 8	Oct 17	30	94	16
Parula Warbler	Apr 12	31	May 12	May 22	May 25	31	43	14
<i>Parula americana</i>	Sep 5	38	Sep 13	Sep 30	Oct 8	30	27	12
*Yellow Warbler	Apr 27	42	May 3	Sep 12	Oct 25	41	453	16
<i>Dendroica petechia</i>								
Magnolia Warbler	Apr 30	42	May 8	May 29	Jun 2	40	254	16
<i>Dendroica magna</i>	Aug 15	33	Aug 21	Oct 10	Oct 19	43	441	16
Cape May Warbler	May 1	36	May 9	May 25	May 28	29	103	16
<i>Dendroica tigrina</i>	Aug 12	42	Aug 23	Oct 3	Oct 15	30	237	16
Black-throated Blue Warbler	May 3	42	May 10	May 25	May 29	28	98	15
<i>Dendroica caerulescens</i>	Aug 24	36	Sep 8	Oct 10	Oct 26	30	122	16
Myrtle Warbler	Apr 5	29	Apr 11	May 22	May 29	39	266	16
<i>Dendroica coronata</i>	Aug 12	39	Sep 15	Oct 31	Nov 11	36	440	16
Black-throated Green Warbler	Apr 26	42	May 7	May 27	June 2	40	143	15
<i>Dendroica virens</i>	Aug 18	41	Aug 23	Oct 9	Oct 23	29	254	15
Cerulean Warbler	May 25	42					1	1
<i>Dendroica cerulea</i>								
Blackburnian Warbler	Apr 30	34	May 9	May 26	Jun 1	40	123	15
<i>Dendroica fusca</i>	Aug 14	33	Aug 19	Sep 19	Sep 27	35	127	14
Chestnut-sided Warbler	May 2	30	May 8	May 28	Jun 2	40	203	15
<i>Dendroica pennsylvanica</i>	Aug 15	33	Aug 21	Oct 1	Oct 13	28	195	16
Bay-breasted Warbler	Apr 30	42	May 12	May 25	Jun 1	28	80	15
<i>Dendroica castanea</i>	Aug 14	42	Aug 27	Oct 1	Oct 13	28	151	16
Black-poll Warbler	May 3	30	May 14	May 29	Jun 2	28	155	15
<i>Dendroica striata</i>	Aug 18	42	Aug 25	Oct 14	Nov 17	31	347	16
Pine Warbler	Apr 20	36	Apr 26	May 8	May 28	37	30	9
<i>Dendroica pinus</i>	Sep 18	34	Sep 28	Oct 11	Oct 19	36	10	8

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Prairie Warbler	May 4 34	(May 5 32)		May 17 29	3	3
<i>Dendroica discolor</i>	Sep 2 35				1	1
Palm Warbler	Apr 20 31	Apr 25	May 23	May 29 31	324	16
<i>Dendroica palmarum</i>	Aug 27 35	Sep 4	Oct 21	Nov 17 30	542	16
Oven-bird	Apr 29 30	May 3	May 26	Jun 2 40	188	16
<i>Seiurus aurocapillus</i>	Aug 20 41	Aug 30	Oct 3	Oct 17 39	211	16
†Northern Water-thrush	Apr 28 33	May 2	May 26	Jun 1 28	193	16
<i>Seiurus noveboracensis</i>	Aug 1 38	Aug 12	Oct 8	Oct 18 28	360	16
Kentucky Warbler	May 22 40				1	3
<i>Oporornis formosus</i>						
Connecticut Warbler	May 18 31	May 21	May 27	Jun 1 28	27	15
<i>Oporornis agilis</i>	Aug 20 36	Sep 1	Sep 16	Oct 13 41	38	12
Mourning Warbler	May 8 30	May 15		June 2 40	116	16
<i>Oporornis philadelphia</i>	Aug 17 41	Aug 25	Sep 11	Sep 17	24	10
Yellow-throat	Apr 25 42	May 3	May 27	Jun 2 40	249	16
<i>Geothlypis trichas</i>	Aug 21 41	Aug 29	Oct 9	Oct 28 31	226	15
Yellow-breasted Chat	May 2 42	(May 4 28)	(May 12 30)	May 15 37	6	5
<i>Icteria virens</i>						
Hooded Warbler	May 27 31				1	1
<i>Wilsonia citrina</i>						
Wilson's Warbler	May 6 34	May 11	May 29	Jun 2 40	209	15
<i>Wilsonia pusilla</i>	Aug 17 39	Aug 24	Sep 19	Oct 5 42	115	16
Canada Warbler	May 7 36	May 14	May 29	Jun 2 40	156	15
<i>Wilsonia canadensis</i>	Aug 13 34	Aug 19	Sep 11	Sep 19 29	76	15
American Redstart	May 1 28	May 6	May 30	Jun 2 40	301	16
<i>Setophaga ruticilla</i>	Aug 9 39	Aug 14	Oct 8	Oct 31 38	517	16
*English Sparrow	Present all year					
<i>Passer domesticus</i>						
Bobolink	Apr 29 28	May 4	May 20	May 31 40	83	16
<i>Dolichonyx oryzivorus</i>	Aug 10 36	Aug 14	Sep 15	Oct 5 37	28	6

Eastern Meadowlark	Feb. 26 32	Mar 10	May 17	Jun 1 40	336	16
<i>Sturnella magna</i>	Sep 19 39	Oct 7	Oct 25	Nov 20 35	33	11
Western Meadowlark	Mar 13 38	(Mar 31 41)	(Apr 7 40)	Apr 20 38	4	3
<i>Sturnella neglecta</i>						
Yellow-headed Blackbird	Apr 22 29	(May 20 40)		May 21 41	3	3
<i>Xanthocephalus xanthocephalus</i>	Sep 15 31				1	1
*Red-wing	Mar 3 31	Mar 13	Oct 16	Dec 5 30	797	16
<i>Agelaius phoeniceus</i>						
*Orchard Oriole	Apr 30 29	May 10	May 15	May 18 28	12	6
<i>Icterus spurius</i>						
*Baltimore Oriole	Apr 25 29	May 5	May 25	May 31 29	150	16
<i>Icterus galbula</i>	Aug 4 38	Aug 15	Aug 30	Sep 16 30	43	12
Rusty Blackbird	Mar 18 38	Apr 2	Apr 26	May 5 40	55	14
<i>Euphagus carolinus</i>	Sep 15 37	Sep 26	Nov 2	Nov 23 30	112	16
Brewer's Blackbird	Sep 13 32		(Oct 21 29)	Oct 27 29	3	2
<i>Euphagus cyanocephalus</i>						
*Bronzed Grackle	Feb 27 30	Mar 14	Oct 31	Nov 9 30	1545	16
<i>Quiscalus versicolor</i>						
*Cowbird	Mar 18 38	Mar 27	Aug 26	Oct 15 30	550	16
<i>Molothrus ater</i>						
Scarlet Tanager	Apr 28 38	May 10	May 26	Jun 1 28	109	16
<i>Piranga olivacea</i>	Sep 9 41	Sep 18	Sep 28	Oct 6 41	31	13
Summer Tanager	May 14 31			May 18 40	2	2
<i>Piranga rubra</i>						
†*Cardinal	Mar 2 39	Mar 29	Nov 26	Dec 7 39	281	14
<i>Richmondia cardinalis</i>						
Rose-breasted Grosbeak	May 2 36	May 7	May 24	Jun 2 28	112	16
<i>Phenicurus ludovicianus</i>	Aug 6 37	Aug 21	Sep 23	Nov 9 30	79	15
Indigo Bunting	May 3 28	May 9	May 27	Jun 1 28	155	15
<i>Passerina cyanea</i>	Aug 29 42	Sep 28	Oct 8	Oct 24 40	24	7
Dickcissel	May 11 29	(May 22 30)	(May 23 39)	Jun 2 40	4	4
<i>Spiza americana</i>						

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Purple Finch	Mar 12 29	Apr 5	May 10	May 23 43	113	15
<i>Carduelis purpureus</i>	Aug 21 41	Sep 11	Nov 5	Nov 23 40	232	16
Common Redpoll	Mar 2 37	(Mar 3 36)	(Mar 18 37)	Mar 31 37	9	2
<i>Acanthus flammea</i>	Oct 22 41	Oct 29	Nov 20	Dec 3 33	22	11
				Jan 18 34		
Pine Siskin	Apr 28 40	(May 1 37)		May 22 38	3	3
<i>Spinus pinus</i>	Oct 6 42	Oct 19	Nov 5	Nov 17 38	18	7
Goldfinch	Apr 18 41	May 5		Jun 2 40	259	16
<i>Spinus tristis</i>	Aug 3 36	Aug 12	Nov 12	Nov 21 31	131	14
Red Crossbill	Nov 6 31				1	1
<i>Loxia curvirostra</i>						
White-winged Crossbill	Sep 9 35	(Oct 27 38)		Nov 7 39	3	3
<i>Loxia leucoptera</i>						
*Red-eyed Towhee	Mar 12 29	Mar 29	Oct 24	Nov 6 31	624	16
<i>Pipilo erythrophthalmus</i>						
Savannah Sparrow	Mar 23 29	Apr 8	May 25	Jun 2 40	250	16
<i>Passerculus sandwichensis</i>	Aug 27 41	Sep 7	Oct 24	Nov 8 38	207	16
Grasshopper Sparrow	Mar 22 38	Apr 13	May 20	May 31 38	112	16
<i>Ammodramus saviannarum</i>	Aug 9 39	(Sep 25 36)	(Oct 6 37)	Oct 10 38	6	4
Lecote's Sparrow	Mar 15 35	Apr 18	Apr 24	May 23 37	14	9
<i>Passerulus caudatus</i>	Sep 22 36	(Oct 8 34)	(Oct 8 41)	Oct 12 36	4	3
Henslow's Sparrow	Apr 5 29	Apr 18	May 5	May 21 43	52	14
<i>Passerulus henstouii</i>	Oct 3 40		(Oct 6 42)	Oct 8 41	3	3
Nelson's Sparrow	May 12 37	(May 13 34)		May 23 39	3	3
<i>Ammodramus caudatus nelsoni</i>	Sep 12 38	Sep 20	Oct 3	Oct 21 42	12	6
Vesper Sparrow	Apr 1 41	Apr 7	Apr 28	May 3 32	95	14
<i>Poocetes gramineus</i>	Sep 18 36	Sep 30	Oct 28	Nov 18 40	58	13
Lark Sparrow	Apr 30 40				1	1
<i>Chondestes grammacus</i>	Sep 6 39			Oct 2 36	2	2

Bachman's Sparrow <i>Ammodramus aestivalis</i>	Mar 26 38	(Mar 27 38)	(Mar 27 38)	Apr 7 32	4	2
Slate-colored Junco <i>Junco hyemalis</i>	Feb 26 30 Sep 5 39	Mar 12 Sep 16	May 10 Nov 27	May 24 30 Dec 12 31	481 635	16 16
Oregon Junco <i>Junco oregonus</i>	Mar 19 38 Sep 28 41	(Apr 13 33) Oct 3	(Apr 14 30) Oct 20	Apr 18 39 Oct 25 38	4 14	4 6
Tree Sparrow <i>Spizella arborea</i>	Feb 26 30 Oct 1 38	Mar 15 Oct 10	Apr 26 Nov 17	May 10 33 Dec 7 39 Jan 10 36	217 313	16 16
‡*Chipping Sparrow <i>Spizella passerina</i>	Apr 5 34 Aug 7 42	Apr 20 Sep 20	May 21 Oct 22	Jun 1 40 Nov 6 43	161 69	16 16
Clay-colored Sparrow <i>Spizella pallida</i>	Apr 29 39 Sep 6 37	May 6 Sep 18	May 21 Oct 4	Jun 1 40 Oct 6 39	76 12	14 6
Field Sparrow <i>Spizella pusilla</i>	Mar 10 36 Aug 3 42	Mar 27 Sep 22	May 23 Oct 28	May 31 38 Nov 18 43	439 205	16 16
Harris's Sparrow <i>Zonotrichia querula</i>	May 3 38 Sep 19 38	May 12 Sep 27	May 15 Oct 17	May 29 30 Nov 6 34	18 107	8 14
White-crowned Sparrow <i>Zonotrichia leucophrys</i>	Apr 26 37	Apr 29	May 25	May 31 41	318	16
Gambel's Sparrow <i>Zonotrichia leucophrys gambelii</i>	Sep 12 37 May 3	Sep 22 (May 6 39)	Oct 23 (May 10 40)	Nov 9 39 May 22 43	310 9	16 5
†Golden-crowned Sparrow <i>Zonotrichia coronata</i>	Apr 29 42				1	1
White-throated Sparrow <i>Zonotrichia albicollis</i>	Mar 25 38 Aug 30 33	Apr 15 Sep 8	May 26 Nov 4	Jun 1 40 Dec 4 30	473 586	16 16
Fox Sparrow <i>Passerella iliaca</i>	Mar 11 36 Sep 16 42	Mar 24 Sep 23	Apr 22 Nov 5	May 25 30 Nov 20 35	193 355	16 16
Lincoln's Sparrow <i>Melospiza lincolni</i>	Apr 19 41 Sep 2 38	Apr 30 Sep 10	May 27 Oct 16	Jun 1 28 Oct 28 36	242 200	16 16
Swamp Sparrow <i>Melospiza georgiana</i>	Feb 26 32 Sep 14 37	Mar 27 Sep 22	May 27 Oct 31	May 31 40 Dec 6 30	385 304	16 16

Species	Earliest date of arrival	Average date of arrival	Average date last seen	Latest date seen	Number of days seen	Number of years seen
* Song Sparrow	Mar 5 35	Mar 15	May 6	May 19 40	384	16
<i>Metospiza melodia</i>	Aug 4 41	Aug 16	Nov 3	Nov 17 31	447	16
Lapland Longspur	Mar 20 40	Apr 19	May 7	May 13 43	10	6
<i>Calcarius lapponicus</i>	Sep 17 37	Oct 4	Nov 21	Dec 14 36	108	11
Smith's Longspur	Mar 30 43	(Apr 26 39)	(Apr 29 40)	May 15 40	4	3
<i>Calcarius pictus</i>						
Snow Bunting	Mar 4 39	(Mar 16 40)	(Mar 18 40)	Mar 19 40	5	2
<i>Plectrophenax nivalis</i>	Oct 14 36	Oct 28	Nov 25	Dec 28 37	103	14
				(Jan 16 39)		

COMMENTS ON THE LIST

When Dreuth encountered a new and rare species, he wrote a description of it in his notebook. These descriptions will be quoted in a number of cases which follow.

Eared Grebe. Apr. 6, 1939. "Upper parts dark gray, throat, front of neck, and under parts white. The cheeks were gray from the top of the head to far below the eye, where it gradually merged into the white of the lower cheek. Bill black, tipped with yellow; eyes red; size about that of horned grebe; bill short and slender. This gray cheek gave the side of the head a very different effect from that of the horned grebe. The bird was very tame. Distance about 20 feet."

Brant. Oct. 9, 1932. "Flew up and down the beach several times. Flew rather low: wing beats faster than the Canada goose, but slower than a duck. Bill, head, neck, breast, upper belly black, contrasting with the white under tail coverts. Upper parts dark gray; outer tail feathers white."

Mallard. Dreuth kept no record of this species because of the difficulty of distinguishing wild from tame birds. Mr. Ford writes in a letter: "The population is probably composed of wild birds, semi-domesticated individuals, and some of completely domesticated status but of unhampered flight. There can be slight doubt that old nesting records from our area were of feral birds and that more recent nesting records from such outlying places as Homewood and Waukegan are in the same category."

Scaup. The greater scaup duck, *Aythya manila*, was identified nine times: Apr. 11, 1932; Mar. 11, 1938; six times between Mar. 29 and Apr. 29, 1941; Mar. 24, 1942. The lesser scaup, *Aythya affinis*,¹ 81 times in 13 years, 79 times from Feb. 27 to May 19; Dec. 15, 1931; Dec. 17, 1938.

American Eider. Apr. 12, 1943. "Black crown, white face and breast. Great white wing patches. Dark back; slow flight."

King Eider. Nov. 25, 1932. "Was with the female scaup and noticeably larger and longer. Dark brownish gray all over (like black duck) , darkest on back and lightest on breast, which looked as though speckled with whitish. When it flew it showed no wing bars. Bill with a small bump at upper base. A young male."

Surf Scoter. Dec. 10, 1938. "Brownish black all over except as follows: two spots on cheek white, belly white. The bird flapped its wings and showed no white. Long sloping bill and forehead, a little white on bill."

American Scoter. May 13, 1931. "Brownish gray all over, lower half of cheek white; bill dusky, a small light spot at the base of the upper mandible; no speculum (it stretched its wings) ; size about that of the scaup, but bill shorter. The whole of the lower cheek was sharply defined from that of the upper half."

Iceland Gull. Mar. 26, 1941. "It was standing close to two adult herring gulls and was noticeably smaller with a shorter and more slender bill, smaller head and body. It was pale brownish-gray all over, including the primaries and tail. In flight it showed no tail band or dark primaries. It was nearly even in color all over, no contrast anywhere. Bill, flesh color with black tip; legs pinkish. Distance 40 feet."

Thayer's Gull. Mar. 20, 1939. "The general appearance was that of the common herring gull with the exception of the wing pattern. In flight the primaries were dark slate, each primary with a broad white border and a white tip. This made the whole wing look very light, quite unlike that of the herring gull in flight. Sitting on the water beside adult herrings, in bright sunlight, the primaries were dark gray with white tips in sharp contrast to the inky-black primaries of the herring gull. Distance about 30 feet."

A specimen of Thayer's gull, taken in the Chicago region, is now in the British Museum (Dwight, J., Jr., 1925, *Bull Amer. Mus. Nat. Hist.*, vol. 52, p. 63-401).

Little Gull. Apr. 29, 1938. (First record.) "Fine light with the bird 10 to 50 feet away; flying and fishing with the Bonaparte's gulls. Head and bill blackish; legs bright reddish. Upper parts and wings light gray, the wings with a border on inner side. From below the wings were dark gray, blacking toward the inner white border, which contrasted sharply with the blackish under-wing. When close to a Bonaparte it looked smaller. No black on upper wings."

Nighthawk. Nests on flat roofs of buildings near the Park.

Chimney Swift. Doubtless nests in chimneys near the Park.

Red-naped Sapsucker, *Sphyrapicus varius nuchalis*. Apr. 27, 1930. "Rose-colored line below the black line on the nape, and extending across it, $\frac{1}{4}$ inch wide." In view of the great distance of this example from the normal range of this subspecies, which extends east to Wyoming, Montana and Alberta, we follow A. L. Rand's decision (1948, *Auk*, vol. 65, p. 425) in regard to a somewhat similar specimen taken in Quebec. It seems best to consider this bird as probably an unusual variant of the yellow-bellied sapsucker, *S. v. varius*.

Swallows. The comparative scarcity of swallow records in Dreuth's list is due to the difficulty of identifying the species in the loose flocks that flew along the shore line, not far above the ground, and quickly passed on.

Swainson's Warbler. Apr. 19, 1941. "The back was unstreaked brownish-gray; the head a brighter contrasty brown. Below, soiled buffy-white; a conspicuous dull white line over the eye; dark slender warbler bill."

One of the authors (C. T. C.) first saw the Swainson's warbler on Apr. 13, 1941, and last saw it on Apr. 19, 1941. His notes: "Seen at close range, often within 15 feet, for about 20-25 minutes. Warbler size.

Eye dark. Bill dark. Eye stripe very pale grayish-buffy. Face below eye, grayish. Upper parts, wing and tail olive-brown, brightest on head. An almost imperceptible wash of yellowish on rump. Underparts whitish washed with grayish-bully, palest on under tail coverts, sides grayer. Tail rather short and very slightly forked. Legs pinkish. Hopped around, sometimes taking a few steps while poking around in the leaves. Very tame. The *Chicago Tribune* wrote on April 13: 'There has been for the past three or four days a violent battle of storm elements.... This storm area has shifted us the warm southerly winds from the Caribbean and the Gulf of Mexico.... When the temperature reached 82.7 degrees at 3 P. M. yesterday it broke an all-time record for that date'."

Water Thrushes. Dreuth believed that he never saw a Louisiana water thrush, *Seiurus motacilla*, because he never observed a bird with a pure white line over the eye.

English Sparrows. Dreuth kept no record of this species except occasional notes on albinistic individuals.

Golden-crowned Sparrow. An adult bird seen with a flock of white-throats under a row of thorn apples north of the bird sanctuary. An immature female was trapped Nov. 28, 1935 at Waukegan by W. I. Lyon.

The sage thrasher, *Oreoscoptes montanus*, has been omitted from the regular list because of the great distance from its normal range and the lack of supporting evidence from specimens or from sight records by other observers. Dreuth recorded it May 11, 1940. "Smaller than the brown thrasher with the tail shorter, and when folded, very slender. Above, light brownish gray, the primaries and tail darker. Below, white with brownish gray stripes. Wing with a narrow whitish wingbar. Eyes yellow. When it flew it showed white spots along the tips of the outer tail feathers. The bird was on the ground and in low shrubbery at a distance of about 15 feet. The place was on the peninsula between Belmont Harbor and the lake."

CHANGES IN STATUS

Fifty years ago Herbert E. and Alice H. Walter made a study of spring migration in Lincoln Park, summarizing their findings in their little book "Wild Birds in City Parks" (1904, 3rd ed., Mumford, Chicago) . In the "Table of Arrival," p. 35-40, they note the first appearance of 114 "land birds" each year, from 1897 to 1903 inclusive. In the "Table of Occurrence," p. 32-34, the birds are arranged according to the order of their comparative frequency; i. e., the number of days each was seen on 454 mornings in March, April, and May from 1898 through 1903. Finally, on p. 54, a chart shows the number of birds seen each day from May 7 to 20 each year from 1898 to 1903.

The Walters, averaging 75 trips per spring for six years, recorded 114 "land birds," while Dreuth, averaging 61 trips for 16 springs (and covering more territory), recorded 150 "land birds." What changes have taken place in 40 years?

With both, the robin was seen most often and the grackle next of the land birds, except for the starling, which stands second in Dreuth's list (Table V) and was not present at all in the Walters' day. (The English Sparrow undoubtedly would have headed both lists, if it had not been ignored by all three observers.) The cardinal stands 55th on the Dreuth list (with "water birds" omitted) , 111th on the Walters' list.

The most striking changes in status are shown in Table II.

Table II. Change of Status between 1898-1903 and 1928-1943

Average number of days seen in spring					
Species that have increased:			Species that have decreased:		
	Walters	Dreuth		Walters	Dreuth
Starling	0	45	Kingfisher	23	15
Cardinal	0.16	7	Chipping Sparrow	18	10
Red-wing	4	40	Bluebird	25	7
Purple Martin	5	36	Least Flycatcher	16	4
Tree Sparrow	5.5	14	Blue-gray Gnatcatcher	16	4
Mourning Dove	6	15	Migrant Shrike	9	0.9
Nighthawk	2	3			

Of the birds that have increased, the purple martin and redwing have done so in response to changes in environment in the park houses put up for the former, the establishment in the early twenties of the sanctuary which affords nesting facilities.

The starling was first recorded in Lincoln Park by Dreuth on Sept. 25, 1929, three birds together. The next year one was seen on Apr. 27 examining a room in a martin house and another bird noted on Oct. 14. In 1931, one was seen Mar. 21. In 1932, two were seen Mar. 18, five on the 28th, and after that fair numbers were recorded on practically every trip. From 1932 to 1943, the robin was seen 1590 times, the starling 1643.

The cardinal was seen only twice by the Walters Mar. 28, 1897, and Apr. 25, 1900. Dreuth recorded it as follows: 1905, Apr. 9, a female; 1906, Apr. 29, a male; 1909, single males Mar. 28 and Apr. 25; 1912, a female May 5; 1919, a male Mar. 30, a female Apr. 20. After that he found it sporadically between 1927 and 1933, usually single birds of either sex: 1927, three times in May, October, and December; 1928, a pair, six times between Mar. 25 and May 8; 1929, one bird, a male, Apr. 18; 1930, six times between Apr. 3 and May 6; 1931, Nov. 13, 17; 1932, a female,

May 21; 1933, Apr. 12 and May 21. No cardinals were then recorded until, in 1936, a female was seen Apr. 15 and a male May 19, but birds were noted throughout August and September and as late as Oct. 2. On Aug. 6 he found two young birds with dusky brown bills; on the 20th he noted that the young female "sang a low whisper song, a kind of warble." From 1936, it was well established as a breeding bird.

The nighthawk has increased in Chicago since it has taken to nesting on gravel roofs. Dreuth recorded none in the park until Aug. 16, 1933; birds were seen many times each fall after this, and in spring in 1934, 1936, and each one thereafter.

From 1928 to 1932, records of mourning doves were few: two to nine in April and May and only two in the fall. In 1933, there were 11 records from Apr. 2 to May 22. In 1934, records extended from Mar. 21 to May 17; the following year from Mar. 22 to Nov. 20. After that these birds have usually been seen from March until October.

From 1934 on both herring and ring-billed gulls increased.

As to decreases, it may be that the persecution of kingfishers at fish hatcheries has something to do with lessening the numbers of this species. With bluebirds, probably the lack of nesting facilities is partly to blame; certainly where boxes are put up in large numbers, there has been a gratifying response from this fine bird Dreuth never recorded a bluebird in the fall.

Decrease of three of the species in Table II is mentioned in "Birds of the Chicago Region," by Ford, Sanborn, and Coursen (1934) . The least flycatcher is "an uncommon summer resident, formerly more common." The chipping sparrow "has become rare in the immediate vicinity of Chicago where formerly it was exceedingly common, nesting in parks, cemeteries, and the shade trees of residence districts." The migrant shrike is "much less abundant than twenty-five years ago. This may be due to the destruction of Osage orange hedges which, in our area, were chiefly used as the nesting site of this species."

THE BREEDING BIRDS

Although the migration in Lincoln Park has fascinated many observers, few seem to have paid much attention to the nesting birds. Edward R. Ford sent us data on the nesting birds during his and the Walters' time, listing 14 species that nested either in the park or in areas now included in the park. Of these, the orchard oriole had nested once. "Formerly red-headed woodpeckers and downies nested near the park in the vicinity of the lake. Flickers and hairies nested away from the lake, the latter being uncommon as a nester. It is evident that the sanctuary is an important factor in some of the changes noted."

Dreuth mentions nest building, nests with eggs or young, and fledglings for 15 species. Holly R. Bennett gave us information on the birds he has found nesting during the last five years. Species listed in the fourth column of Table III were noted in the park on two mornings in late June, 1949.

Table III. Breeding Birds in Lincoln Park

() means probably breeding

	Ford 1900	Dreuth and Clark 1928-43	Bennett 1945-49	Nice June 24, 28, '49
Mallard	x	x	x	x
Killdeer		x	x	
Spotted Sandpiper (Mourning Dove)		x (x)		(x)
Yellow-billed Cuckoo			x	
Screech Owl	x	x	x	
Flicker		x	x	x
Red-headed Woodpecker (Downy Woodpecker)		x (x)		
Kingbird	x	x		
(Crested Flycatcher)		(x)		(x)
Wood Pewee	x	x	x	x
Purple Martin		x	x	x
Blue Jay		x	x	x
House Wren			x	x
Catbird		x	x	x
Brown Thrasher		x	x	
Robin	x	x	x	x
Starling		x	x	x
Red-eyed Vireo	x			x
Warbling Vireo	x		x	
Yellow Warbler	x	x	x	
English Sparrow	x	x	x	x
Red-wing		x	x	
Orchard Oriole	x			
Baltimore Oriole	x	x		
Bronzed Grackle	x	x	x	x
Cowbird	x	x	x	x
Cardinal		x	x	x
Towhee			x	
Chipping Sparrow	x	(x)		
Song Sparrow		(x)	x	

Twenty-nine species are listed as having bred in Lincoln Park, or areas now included in the park, during the last 50 years. Three others have probably bred, because of their presence in some years as late as June 2, when Dreuth's visits ceased (and also on June 24, 1949) and in some cases as early as August 2 when his visits were resumed. It is hoped that this table will serve as an incentive to greater interest in the nesting birds in our city parks.

FREQUENCY

The frequency of occurrence of the 257 species and subspecies recorded by Dreuth (mallards and English sparrows disregarded) was studied by one of the authors (C.T.C.) The method of status classification was as follows: the number of days a bird was observed was divided by the number of field trips taken during the average period of occurrence of the bird. Thus the sanderling was seen 542 times on 1028 trips during its average transient period of 89 days in the fall; frequency, 53 per cent. The Philadelphia vireo was seen 66 times on 125 field trips during its average transient period of 8 days in the spring; frequency, 53 per cent. These mathematical frequencies are converted into an expression of status

Table IV. Frequency of Occurrence

Frequency	Status	Abbreviation
greater than .70	Very frequent	v f
.40 — .70	frequent	f
.20 — .39	rather frequent	r f
.10 — .19	infrequent	i
.03 — .09	rather rare	r r
.02 or less	rare	r
1-3 observations	very rare or accidental	v r a

in Table IV. Frequency must not be confused with abundance, for in frequency the date is the unit, and one bird of one species counts as much as hundreds of another. There is a relationship in this sense: an abundant bird runs no chance of being overlooked, whereas a very uncommon one may be missed.

In Table V, the birds are arranged in order of total number of times seen from the most frequent to the least frequent. The number of times seen in spring and fall is also given, as well as the bird's frequency status for each season.

Table V. Frequency of Birds in Lincoln ParL

	Number of times seen in 2406 trips		
	Spring	Fall	Total
1. Robin	927 v f	1112 v f	2039
2. Starling	720 v f	927 v f	1647
3. Herring Gull	694 f	914 f	1608
4. Bonaparte's Gull	575 v f	1002 v f	1577
5. Bronzed Grackle	901 v f	644 f	1545
6. Flicker	593 v f	697 v f	1290
7. Slate-colored Junco	481 v f	635 v f	1116
8. White-throated Sparrow	473 v f	586 v f	1059
9. Brown Thrasher	510 v f	513 f	1023
10. Purple Martin	573 v f	378 v f	951
11. Palm Warbler	324 v f	542 v f	866
12. Killdeer	428 f	423 f	851
13. Song Sparrow	384 f	447 f	831
14. American Redstart	301 v f	517 v f	818
15. Red-winged Blackbird	635 f	162 i	797
16. Hermit Thrush	332 v f	390 v f	722
17. Myrtle Warbler	266 f	440 v f	706
18. Magnolia Warbler	254 v f	441 v f	695
19. Swamp Sparrow	385 f	304 v f	689
20. Olive-backed Thrush	363 v f	312 v f	675
21. Ruby-crowned Kinglet	339 f	313 f	652
22. Field Sparrow	439 f	205 f	644
23. White-crowned Sparrow	318 v f	310 v f	628
24. Red-eyed Towhee	476 f	148 f	624
25. Black and White Warbler	234 f	376 f	610
26. Red-headed Woodpecker	366 v f	243 f	609
27. Spotted Sandpiper	299 f	306 f	605
28. Brown Creeper	227 f	370 f	597
29. Scaup Ducks	462 f	111 f	573
30. Ring-billed Gull	139 r f	433 r f	572
31. Sanderling	29 i	542 f	571
32. Yellow-bellied Sapsucker	258 f	310 f	568
33. Golden-crowned Kinglet	175 f	382 v f	557
34. Water-thrush	193 f	360 f	553
35. Cowbird	528 f	22 i	550
36. Fox Sparrow	193 f	355 f	548
37. Tree Sparrow	218 f	313 v f	531
38. Red-breasted Merganser	417 f	112 f	529
39. Blue Jay	342 f	175 r f	517
40. Black-poll Warbler	155 f	347 f	502
41. Semipalmated Plover	52 i	439 f	491
42. Common Tern	271 v f	206 r f	477
43. Black Tern	108 f	368 v f	476
44. Yellow-throat	249 f	226 f	475
45. Belted Kingfisher	240 r f	226 r f	466
46. Old-Squaw	354 f	109 f	463
47. Savannah Sparrow	250 r f	207 r f	457
48. Yellow Warbler	257 f	194 f	453
49. Catbird	284 f	160 r f	444
50. Lincoln's Sparrow	242 f	200 f	442

(Table V, continued)

	Number of times seen in 2406 trips		
	Spring	Fall	Total
51. Phoebe	208 f	220 r f	428
52. Black-bellied Plover	46 i	380 f	426
53. American Golden-eye	315 v f	96 v f	411
54. Oven-bird	188 f	211 f	399
55. Chestnut-sided Warbler	203 f	195 r f	398
56. Black-throated Green Warbler	143 f	254 f	397
57. Goldfinch	259 f	131 i	390
58. Eastern Meadowlark	336 f	33 i	369
59. Chimney Swift	189 f	178 f	367
60. Red-eyed Vireo	139 f	228 f	367
61. Wood Pewee	153 f	213 f	366
62. Grey-cheeked Thrush	221 f	130 r f	351
63. Purple Finch	113 r f	232 r f	345
64. Green Heron	140 r f	204 r f	344
65. Cape May Warbler	103 f	237 f	340
66. Tennessee Warbler	64 r f	264 f	328
67. Wilson's Warbler	209 v f	115 r f	324
68. Downy Woodpecker	93 i	220 i	313
69. Ruddy Turnstone	29 i	258 f	287
70. Mourning Dove	247 r f	37 i	284
71. Semipalmated Sandpiper	35 i	247 r f	282
72. Cardinal	118 i	163 i	281
73. Orange-crowned Warbler	132 f	138 r f	270
74. Blackburnian Warbler	123 f	127 r f	250
75. Nighthawk	27 i	219 r f	246
76. Nashville Warbler	149 f	94 r f	243
77. Barn Swallow	213 f	27 f	240
78. Yellow-bellied Flycatcher	114 f	125 i	239
79. House Wren	182 f	57 i	239
80. Cedar Waxwing	78 r f	156 r f	234
81. Canada Warbler	156 f	76 r f	232
82. Bay-breasted Warbler	80 f	151 r f	231
83. Chipping Sparrow	161 r f	69 i	230
84. Eastern Kingbird	143 f	85 f	228
85. Black-throated Blue Warbler	98 f	122 r f	220
86. Least Sandpiper	8 r	190 r f	198
87. Baltimore Oriole	150 f	43 r f	193.
88. Rose-breasted Grosbeak	112 f	79 r f	191
89. American Merganser	136 f	50 f	186
90. Indigo Bunting	155 f	24 r f	179
91. Rusty Blackbird	55 r f	112 r f	167
92. Crested Flycatcher	126 r f	35 r f	161
93. Crow	96i	57rf	153
94. Vesper Sparrow	95 r f	58 i	153
95. Coot	51 i	100 i	151
96. Red-breasted Nuthatch	62 r f	81 i	143
97. Mourning Warbler	116 f	24 i	140
98. Scarlet Tanager	109 f	31 r f	140
99. Prairie Horned Lark	101 i	35 i	136
100. Franklin's Gull	0	135 i	135
101. Philadelphia Vireo	66 f	65 f	131

(Table V, continued)

	Number of times seen in 2406 tries		
	Spring	Fall	Total
102. Veery	114 f	13 r r	127
103. Harris's Sparrow	18 r f	107 r f	125
104. Baird's Sandpiper	3 r	118 r f	121
105. Black-billed Cuckoo	68 r f	51 i	119
106. Grasshopper Sparrow	112 r f	6 r	118
107. Lapland Longspur	10 r r	108 r f	118
108. Bluebird	112 i	0	112
109. Bobolink	83 r f	28 r r	111
110. Snow Bunting	7 r	103 f	110
111. Yellow-billed Cuckoo	37 r f	70 r f	107
112. Ruby-throated Hummingbird	68 r f	31 i	99
113. Blue-headed Vireo	62 r f	37 i	99
114. Horned Grebe	56 r f	42 r f	98
115. Red-backed Sandpiper	5 r	85 r f	90
116. Pied-billed Grebe	53 r f	36 i	89
117. Golden Plover	0	89 i	89
118. Sora	43 i	45 i	88
119. Clay-colored Sparrow	76 r f	12 r r	88
120. Pectoral Sandpiper	8 r	79 i	87
121. Willow Thrush	81 r f	6 r	87
122. Wilson's Snipe	27 i	58 i	85
123. Solitary Sandpiper	37 i	42 i	79
124. Common Loon	48 i	29 i	77
125. Parula Warbler	43 r f	27 i	70
126. Great Blue Heron	21 r r	48 r r	69
127. Least Flycatcher	66 r f	3 r	69
128. Tree Swallow	61 r f	8 r	69
129. Blue-gray Gnatcatcher	63 r f	5 r	68
130. American Bittern	35 i	32 r r	67
131. Warbling Vireo	57 r f	10 r r	67
132. Connecticut Warbler	27 r f	38 r f	65
133. Short-eared Owl	5 r	54 i	59
134. Henslow's Sparrow	52 r f	3:	55
135. Long-billed Marsh Wren	33 i	21 i	54
136. Blue-winged Teal	46 i	5 r	51
137. Wood Thrush	36 i	15 r r	51
138. Black-capped Chickadee	28 r r	21 r r	49
139. Caspian Tern	5 r	43 i	48
140. Sharp-shinned Hawk	20 r r	23 r r	43
141. Winter Wren	12 r r	30 i	42
142. Golden-winged Warbler	12 r r	30 i	42
143. Buffle-head	23 r r	17 r r	40
144. Pine Warbler	30 i	10 r r	40
145. Hooded Merganser	22 i	17 r r	39
146. Ring-necked Duck	15 i	23 r f	38
147. Lesser Yellow-legs	11 r r	27 r r	38
148. Marsh Hawk	22 r r	15 r r	37
149. Black-crowned Night Heron	21 r r	13 r r	34
150. Sparrow Hawk	10 r r	24 r r	34
151. Double-crested Cormorant	14 r	19 r	33

(Table V, continued)

	Spring	Fall	Total
152. Little Gull	10 r	21 r r	31
153. Forster's Tern	9 r r	22 r r	31
154. Northern Horned Lark	4 r	27 r r	31
155. Common Redpoll	10 r	21 i	31
156. Baldpate	30 r r	0	30
157. Short-billed Marsh Wren	11 r r	19 r r	30
158. American Pipit	6 r	24 r r	30
159. Greater Yellow-legs	12 r r	17 r r	29
160. Buff-breasted Sandpiper	0	28 i	28
161. White-breasted Nuthatch	17 r r	11 r r	28
162. Yellow-throated Vireo	14 r r	14 r r	28
163. Piping Plover	14 r r	12 r r	26
164. American Woodcock	26 r r	0	26
165. Ruddy Duck	11 r r	13 r r	24
166. Whip-poor-will	22 i	2 v r	24
167. Carolina Wren	0	21 r	21
168. Pine Siskin	3 r	18 i	21
169. Redhead	15 r r	4 r	19
170. Leconte's Sparrow	14 r r	4 r	18
171. Oregon Junco	4 r	14 r r	18
172. Mockingbird	7 r	10 r	17
173. Olive-sided Flycatcher	8 r	8 r	16
174. Bank Swallow	14 r r	2 v r	16
175. Nelson's Sparrow	3 r	12 r r	15
176. Cliff Swallow	8 r	6 r	14
177. Canada Goose	8 r	5 r	13
178. Snow Goose	0	13 r r	13
179. Shoveller	11 r r	2 v r	13
180. Upland Plover	8 r	5 r	13
181. Willet	7 r	6 r	13
182. Bewick's Wren	13 r r	0	13
183. Virginia Rail	8 r	4 r	12
184. Migrant Shrike	12 r r	0	12
185. Orchard Oriole	12 r r	0	12
186. Pintail	7 r	4 r	11
187. Duck Hawk	0	11 r r	11
188. Dowitcher	3 r	8 r	11
189. Prothonotary Warbler	8 r	3 v r	11
190. Canvas-back	8 r	2 v r	10
191. White-winged Scoter	4 r	6 r	10
192. Blue Goose	0	9 r r	9
193. King Rail	9 r	0	9
194. Hairy Woodpecker	4 r	5 r	9
195. Gambel's Sparrow	9 r r	0	9
196. Least Bittern	5 r	3 v r	8
197. American Knot	0	7 r	7
198. Snowy Owl	0	7 r	7
199. Alder Flycatcher	7 r	0	7
200. Red-throated Loon	6 r	0	6
201. Holboell's Grebe	0	6 r	6
202. Hudsonian Curlew	1 v r	5 r	6
203. Laughing Gull	0	6 r	6
204. Yellow-breasted Chat	6 r	0	6

(Table V, continued)

	Number of times seen in 2406 trios		
	Spring	Fall	Total
205. Western Sandpiper	0	5 r	5
206. Barn Owl		4 r	5
207. Long-eared Owl	3 v r		4
208. Rough-winged Swallow	4 r	0	4
209. Prairie Warbler	3 v r	1 r	4
210. Western Meadowlark	4 r	0	4
211. Yellow-headed Blackbird	3 v r	1 v r	4
212. Dickcissel	4 r	0	4
213. Bachman's Sparrow	4 r	0	4
214. Smith's Longspur	4 r	0	4
215. Eared Grebe	3 v r	0	3
216. American Egret		2 v r	3
217. White-rumped Sandpiper	0	3 v r	3
218. Jaeger	0	3 v r	3
219. Screech Owl	3 v r	0	3
220. Tufted Titmouse	0	3 r	3
221. Brewer's Blackbird	0	3 r	3
222. White-winged Crossbill	0	3 r	3
223. Lark Sparrow		2 v r	3
224. Black Duck		1 vt	2
225. Green-winged Teal	0	2 v r	2
226. American Scoter		1 vt	2
227. Cooper's Hawk		1 vt	2
228. Red-shouldered Hawk	2 v r	0	2
229. Rough-legged Hawk		1 vt	2
230. Northern Phalarope	0	2 v r	2
231. Glaucous Gull	2 v r	0	2
232. Sabine's Gull	0	2 v r	2
233. Red-bellied Woodpecker	2 v r	0	2
234. Blue-winged Warbler	2 v r	0	2
235. Summer Tanager	2 v r	0	2
236. Yellow-crowned Night Heron		0	1
237. Brant	0	1 a	1
238. Wood Duck	0	1 vt	1
239. American Eider		0	1
240. King Eider	0	1 vt	1
241. Surf Scoter	0	1 vt	1
242. Purple Sandpiper	0	1 vt	1
243. Iceland Gull		0	1
244. Great Black-backed Gull	0	1 vt	1
245. Thayer's Gull		0	1
246. Saw-whet Owl		0	1
247. Arkansas Kingbird	0	1 a	1
248. Scissor-tailed Flycatcher	1 a	0	1
249. Bohemian Waxwing	0	1 vt	1
250. Northern Shrike	0	1 vt	1
251. Bell's Vireo	0	1 vt	1
252. Cerulean Warbler		0	1
253. Kentucky Warbler		0	1
254. Hooded Warbler		0	1
255. Red Crossbill	0	1 vt	1
256. Golden-crowned Sparrow	1 a	0	1
257. Swainson's Warbler	1 a	0	1

THE DISTRIBUTION OF THE TRIPS

The numbers of field trips each month each year are shown in Table VI, as well as the total numbers of species and subspecies seen each year.

SUMMARY AND DISCUSSION

From 1928 to 1943, William Dreuth made an intensive study of spring and fall migration in Lincoln Park, Chicago; his 36 notebooks were given to the Chicago Academy of Sciences. The value of the study lies in the continuity of the records and in the reliability of the observer. In Table I, the earliest, latest, and average dates of occurrence of 259 species and subspecies are given. This should serve as a migration calendar for bird students in the Chicago region. It is a decided help to know when to expect a species, and it will be of interest to note future trends of possible earlier or later arrivals. The frequencies of occurrence as shown in Table V are of much interest. From a comparison with Herbert and Alice Walters' spring records in Lincoln Park from 1898 to 1903, it appears that six species of "land birds" have decreased in this region and seven have increased, while what is probably now the most frequent bird of all except the house sparrow the starling is new, having been first recorded by Dreuth in 1929. The cardinal has increased markedly; seen twice by the Walters, and 17 times by Dreuth from 1928 to 1933, since 1936 it has been a regular resident.

Twenty-nine species are known to have nested in the park during the last fifty years; this list can undoubtedly be materially augmented. This will be a rewarding field for study, comparison of the present population with that of the past, and also future developments.

Conditions could be improved for nesting birds in the parks, boxes erected for bluebirds and crested flycatchers, and martin houses kept in repair. It is hoped that this report will stimulate interest in the nesting birds in other parks in the city and an investigation of reasons for differences. For instance, mourning doves nest commonly in Jackson Park, but blue jays are absent.

The winter bird life of Lincoln Park is another rich field for observation.

All this is related to the occurrence of the birds, dates, and frequencies. Dreuth's material, however, offers far more than this; it is a storehouse for investigation of the relationships between migration and weather. By means of the U. S. Weather Bureau records, Winifred Smith has correlated migration in the sixteen springs with temperature, barometric pressure, and force and direction of the wind, using the number of new species

Table VI. Distribution of the 2406 Field Trips and Numbers of Species and Subspecies Seen Each Year.

	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	Average
January	3	3	3	5	4	3	3	2	1	1	0	2	0	1	0	0	2
February	4	3	15	10	5	5	1	3	0	0	2	0	0	0	0	0	3
March	4	25	18	9	9	16	12	12	16	11	21	16	12	11	10	10	13
April	5	23	24	28	28	20	25	1	17	22	23	25	23	27	26	22	21
May	31	30	27	26	30	25	22	8	27	30	30	31	29	28	28	27	27
June	2	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0
July	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
August	0	0	0	0	2	22	20	13	29	30	31	31	28	31	29	20	18
September	26	13	28	25	28	16	21	17	28	30	29	29	29	29	29	0	24
October	29	22	18	18	12	23	21	25	29	29	31	28	28	28	22	18	24
November	14	13	16	11	6	8	4	14	12	16	28	27	14	14	5	7	13
December	16	5	7	10	3	3	0	4	2	1	19	16	1	1	0	0	6
Total Trips	134	138	156	142	128	141	129	99	161	170	214	205	166	170	149	104	151
Number of Species Seen	139	151	147	145	166	178	170	156	176	183	199	191	188	187	176	178	165

seen each day as a criterion. These charts have been presented to the Academy. It would be of great interest to make a similar study of Dreuth's records of fall migration. The conditions under which particular species migrate could well be investigated.

The present paper is a sample of the wealth of material in William Dreuth's notebooks. We hope that it will be helpful to observers and will stimulate them to further study.